



Traffic Signal System Modernization Program Newsletter



Traffic Management Division—Department of Public Works

October 2008 ♦ Volume 1 ♦ Issue 4

Communication Network Deployment

The ability to address transportation issues on a real-time basis will soon be a reality. In August, Traffic Engineering and Traffic Operations staff began the deployment of the new 2070 controllers and conflict monitors. To date staff has been able to deploy this new equipment at 178 traffic signal locations along segments of Commerce St, Dolorosa St, Frio St, Pecos, Houston St/AT&T Center, San Pedro Ave, Military Dr, Walzem Rd, Huebner Rd, Stone Oak Pkwy, Thousand Oaks Dr, De Zavala Rd and Loop 1604. These signals will all be connected to the Communications Network, which is being deployed by the Information Technology Services Department, and are equipped with the new local software allowing staff the ability to manage its operations remotely from the City's Traffic Management Center located at TransGuide. Staff will be deploying this new equipment over the next two months and expect to have all 250 Phase 1 locations completed by November 2008.

Staff has been working tirelessly to install the necessary communications equipment to include cabling, breakers, switches, IP addresses, bridges to communicate with radio towers, 2070 controllers, conflict monitors and new timing plans. Once fully completed this new system will provide the ability to address changes in traffic demands to keep traffic moving as smoothly as



2070 Controller deployment along Commerce St.

Flashing Yellow Arrow for Permissive Left Turns – Pilot Program

One of the key requirements of an effective traffic control device is that it conveys a clear, simple meaning. The use of the circular green as it applies to left-turns is one item that has presented a special challenge as evidence supports that motorists do not fully understand its meaning. A variety of different signal displays for permissive left-turns have been tried over the years, but no comprehensive research had been conducted until the mid-1990s. Over a 7 year period, an evaluation of traffic signal displays for protected and permissive left-turns was conducted by the National Cooperative Highway Research Program to evaluate the wide variety of potential displays for permissive left-turn movements.

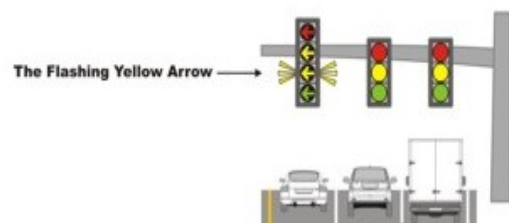
Key findings of the research include:

- * The Flashing Yellow Arrow (FYA) was found to be the best overall alternative to the circular green as the permissive signal display for a left-turn movement.
- * The FYA was found to have a high level of understanding and correct response by left-turn drivers than the circular green.
- * The FYA display in a separate signal face for the left-turn movement offers more versatility in field application. It provides traffic engineers with more options to handle variable traffic volumes allowing for the more efficient management of traffic through their use.

Keeping with our efforts to deploy new technology to address the growing demand on our existing transportation system, the City of San Antonio will be deploying the use of the FYA for permissive left turns along San Pedro Ave at the intersections between Cypress St and Olmos Dr and along Huebner Rd between Blumel Rd and Elm Creek Rd. This Pilot Program will allow us to evaluate the use of the FYA prior to fully implementing their use throughout the city.

How it will work:

The FYA display will be part of a four section, all-arrow display and replace the existing five section display. The FYA will be used to indicate permitted left turns. A typical signal sequence with the FYA is shown on the right.



Typical Flashing Yellow Arrow Sequence:



Solid Red Arrow: Stop. No left turns allowed.



Solid Green Arrow: Left turns protected. Proceed with caution.



Solid Yellow Arrow: Prepare to stop or complete your left turn if permitted.



Flashing Yellow Arrow: Left turns are permitted. Yield to oncoming traffic and pedestrians.



Solid Yellow Arrow: Prepare to stop or complete your left turn if permitted.

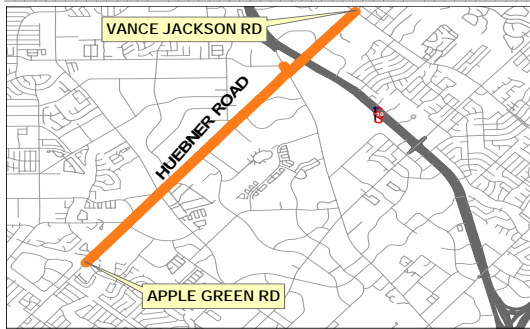


Solid Red Arrow: Stop. No left turns allowed.

Phase 1 Corridor Highlights

Phase 1 of the TSSM Program includes several corridors located throughout the city. Upon completion, all of the signals along these corridors will be connected to the new city-wide communications network, will be upgraded to the new model 2070 traffic signal controller technology, and will have new optimized timing plans. Each newsletter is highlighting some of these corridors.

Huebner Road (Vance Jackson Road to Apple Green Road)



One of the Phase 1 corridors is Huebner Rd from Vance Jackson Rd to Apple Green Rd. This corridor covers over 5 miles and has 12 signalized intersections including the interchange at IH 10.

Carrying over 48,000 vehicles per day, the Huebner Rd corridor is one of the major mobility corridors in north San Antonio. The corridor serves residential communities and commercial developments such as Huebner Oaks, IH 10, Orsinger County Park, USAA and the Medical Center. This corridor also connects the communities of Leon Valley and Shavano Park.

Bandera Road (Eckhart Road to Loop 1604)

Another Phase 1 corridor is Bandera Rd from Eckhart Rd to Loop 1604. This corridor covers over 4 miles and has 9 signalized intersections.

Carrying approximately 55,000 vehicles per day, the Bandera Rd corridor serves residential communities, commercial development, O.P. Schnabel Park and connects Helotes and Leon Valley.



Project Status

Progress continues on the three components of the TSSM Program for Phase 1. The following outlines the latest status of each of these components:

Comprehensive Communications Network

- * Communications Network Design for overall project has been completed.
- * Communications Network Backhaul Design for overall project has been completed.
- * Analysis of all Phase 1 locations to determine equipment placement is complete.
- * ITSD has procured all equipment for Phase 1 locations and has placed order for equipment needed for Phase 2.
- * The installation of wireless communications equipment along segments of San Pedro Ave, Houston St./AT&T Center, Military Dr., Commerce/Market, Durango Blvd, Frio St./Pecos, De Zavala Rd, Walzem Rd, Huebner Rd, Bandera Rd, Stone Oak Pkwy, Thousand Oaks Dr, and Loop 1604 has been completed.
- * Equipment installation at the remaining corridors is at various stages of completion.

Advanced Traffic Control System

- * Installation of the new central control system has been completed.
- * New controllers and conflict monitors for all Phase 1 locations have been received.
- * Training on the new controller software and hardware took place July–September.
- * A 10-cabinet Test Lab was built at Traffic Operations and 24-hour controller “burn-in” is on-going.
- * Project to install Battery Back-up Systems at 59 traffic signal locations located throughout the city has begun.

Traffic Signal Coordination

- * New Timing Plans for all Phase 1 locations have been received and are currently being programmed into the new controllers.
- * Have received a list of short-term improvements for all Phase 1 locations. (Short-term improvements may include signal head replacement, markings, and the addition of necessary signage.)

Just the Facts...

Q What is Traffic Signal Coordination and why is it important?

A Traffic Signal Coordination occurs when signals within a coordinated system use the same cycle length to remain in step with each other thus providing traffic progression.

The greatest benefits to the public for each dollar spent come from the coordination of adjacent traffic signals to provide smooth movement of traffic through a group of signals. The goal of coordination is to comfortably and safely get the greatest number of vehicles through a system with the fewest stops.

Have a question about the project?
Call Maggie Scheppers at 733-4571 or e-mail it to:
traffic.management@sanantonio.gov